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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,552	09/25/2003	William J. Colucci	NM 7520	5492

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EXAMINER	
TOOMER, CEPHIA D	
ART UNIT	**PAPER NUMBER**
1714	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/670,552	COLUCCI ET AL.	
	Examiner	Art Unit	
	Cephia D. Toomer	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,7,10-14 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,7,10-14 and 17-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the amendment filed November 17, 2006 in which claims 1, 3, 4, 7, 17 and 18 were amended.

The rejection of the claims under 35U.S.C. 112, second paragraph is withdrawn in view of the amendment to the claims.

The 102 rejection as being anticipated by McDonnell is withdrawn in view of the amendment to the claims.

The 102 rejection as being anticipated by Cunningham is withdrawn in view of the amendment to the claims.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1 and its dependents are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not support the ratio of detergent to succinimide of from about 16:1 to about 1000:1. by weight. The specification and more specifically Fuel Sample 1 support a ratio of 15.5 to 1. The examiner finds no support for the broad range.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 7, 10-14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDuff (US 6,458,172).

MacDuff teaches a fuel additive composition comprising a Mannich detergent, a fluidizer and optionally a succinimide detergent. Macduff teaches that this additive composition reduces intake valve deposits in internal combustion engines (see abstract).

The Mannich detergent is prepared from the reaction of a hydrocarbyl phenol, an aldehyde and an amine (see col. 1, lines 49-55). The fluidizer may be a polyetheramine as set forth in the present claims (see col. 1, lines 56-57) or a polyether (polyoxyalkylene) that has a molecular weight within Applicant's claimed range (see col. 3, lines 15-19) or a the fluidizer may be a mixture of the polyetheramine and polyether. The succinimide detergent is prepared by reacting a polyamine and a hydrocarbyl-substituted succinic acylating agent (see col. 3, lines 20-24). The polyether and polyetheramine anticipates the claimed molecular weights when n and q are at least 15 and the R substituents are lower alkyl. The fuel composition contains methylcyclopentadienyl manganese tricarbonyl (MMT) and other conventional additives

(see col. 6, lines 46-69). The fuel is gasoline, diesel , gasoline and alcohol or diesel and ether (see col. 5, lines 44-65).

MacDuff teaches the limitations of the claims other than the ratio of Mannich base to succinimide. However, no unobviousness is seen in this difference because it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the proportions of the components through routine experimentation for the best results. As to optimization of results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch,* 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Macduff in view of Udelhofen (US 4,231,759).

Macduff fails to teach that the alkyl-substituted hydroxyaromatic compound used in preparing the Mannich base is alkylated cresol. However, Udelhofen teaches that the alkyl-substituted hydrocarbyl compounds of Macduff may be replaced with alkylated cresol (see abstract; col. 4, lines 59-65).

It would have been obvious to one of ordinary skill in the art to replace the hydroxyaromatic compound of Macduff with alkylated cresol because Udelhofen

teaches that in addition to the hydroxyaromatic compounds others which may be used include alkyl-substituted cresol.

6. Claims 1, 3, 8-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/42399.

WO teaches a fuel composition for direct injection gasoline engines comprising an amine detergent such as a Mannich detergent or a hydrocarbyl succinic anhydride derivative detergent (see abstract). The Mannich detergent is prepared as set forth in the present claims (see page 3, lines 13-18; page 5, lines 11-18). The succinic amine compound may be a succinimide, succinimide-amide or succinimide-esters (see page 5, lines 7-11). Conventional additives such as dispersant/detergents and MMT may be present (see page 8, lines 1-11). The base fuel may be gasoline alone or in combination with an oxygenate (see page 8, lines 12-29). The detergent may be used with a liquid carrier such as a polyalphaolefin, mineral oils and poly(oxyalkylene) compounds having a molecular weight of about 500-3000 (see page 9, lines 1-20). The amine detergents are present in the fuel in an amount from 5 to 100 ptb fuel (see page 5, lines 4-6). WO teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, WO differs from the claims in that it does not specifically teach a mixture of the Mannich base and the succinic amine detergents. However, It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very

same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Furthermore, WO teaches a Markush group wherein more than one amine detergent may be present.

In the second aspect, WO differs from the claims in that it does not specifically teach the ratio of Mannich base to succinimide. However, no unobviousness is seen in this difference because it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the proportions of the components through routine experimentation for the best results. As to optimization of results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch,* 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Response to Arguments

7. Applicant's arguments have been fully considered but they are not persuasive.

8. Applicant argues unexpected results with the use of a Mannich detergent and succinimide in a ratio of 16:1 to 1000:1.

The showing is not commensurate in scope with the claims. The base claim is generic with respect to the Mannich base and succinimide. The ratio set forth in the present specification represent a small range within the huge range set forth in the

claims. The examiner cannot ascertain from this data if unexpected results are obtained.

Applicant argues that MacDuff is directed to reducing intake valve deposits and does not mention reducing injector deposits. Applicant argues that MacDuff is more concerned with the ratio of Mannich base to fluidizer than he is with the optional succinimide. Applicant argues that those examples of MacDuff that include succinimides are outside of Applicant's range.

MacDuff teaches a similar fuel composition used in the same environment as the fuel composition of the present invention. The skilled artisan having MacDuff before him would recognize that the composition may be used to remove injector deposits. MacDuff prefers to remove or reduce intake deposits but he is not limited to only those deposits.

With respect to Applicant's argument regarding the ratio of Mannich base to fluidizer, MacDuff teaches that this ratio also includes the succinimides detergent. MacDuff teaches in his additional embodiments the addition of the succinimide detergent. MacDuff teaches in his additional embodiments that the addition of the succinimide and also claims it (see claims 19-22). While the examples contain the Mannich base and succinimide in a ratio that is outside the scope of the present invention, it is well settled that a reference is relied upon for all that it teaches and not for the examples contained therein.

Applicant argues that Aradi does not teach or suggest utilizing succinimides.

The examiner respectfully disagrees. WO (Aradi) teaches and claims that these compounds may be present in his fuel composition (see claims 9, 10, 12 and 23). With respect to Applicant's alleged unexpected results, the showing is not commensurate in scope with the claims. The base claim is generic with respect to the Mannich base and succinimide. The ratio set forth in the present specification represent a small range within the huge range set forth in the claims. The examiner cannot ascertain from this data if unexpected results are obtained.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cephia D. Toomer
Primary Examiner
Art Unit 1714

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